

<p style="text-align: center;"><b>9 SAMPLING</b></p>	<p style="text-align: right;">Page 1 of 2</p>
<p style="text-align: center;"><b>Division of Forensic Science</b></p> <p style="text-align: center;"><b>CONTROLLED SUBSTANCES TRAINING MANUAL</b></p>	<p style="text-align: right;">Amendment Designator:</p>
	<p style="text-align: right;">Effective Date: 8-December-2003</p>
<p style="text-align: center;"><b>9 SAMPLING</b></p> <p><b>9.1 Objectives</b></p> <p>9.1.1 To familiarize the trainee with the concepts of sampling.</p> <p>9.1.2 To instruct the trainee on the sampling procedures in the laboratory.</p> <p><b>9.2 Modes of Instruction</b></p> <p>9.2.1 Self-directed study through reading assignments</p> <p>9.2.2 Presentations and demonstrations</p> <p>9.2.3 Practical exercise</p> <p><b>9.3 Reference</b></p> <p>9.3.1 DFS Controlled Substances Procedures Manual, Sampling Section</p> <p>9.3.2 Coulson, Sally A., Ph.D. <i>et al.</i>, “How Many Samples from a Drug Seizure Need to Be Analyzed?”, <i>Journal of Forensic Sciences</i>, Volume 46, No. 6 (November 2001), pp. 1456-1461.</p> <p>9.3.3 Colon, Maria, B.S., Rodriguez, Gloria, B.S., and Diaz, Ramon Orlando, M.S. “Representative Sampling of ‘Street’ Drug Exhibits”, <i>Journal of Forensic Sciences</i>, Volume 38, No. 3 (May 1993), pp. 641-648.</p> <p>9.3.4 Tzidony, Dov, and Ravreby, Mark. “A Statistical Approach to Drug Sampling: A Case Study”, <i>Journal of Forensic Sciences</i>, Volume 37, No. 6 (November 1992), pp. 1541-1549.</p> <p>9.3.5 Frank, Richard S., B.S., Hinkley, Sidney W., Ph.D., and Hoffman, Carolyn G., M.A. “Representative Sampling of Drug Seizures on Multiple Containers”, <i>Journal of Forensic Sciences</i>, Volume 36, No. 2 (March 1991), pp. 350-357.</p> <p>9.3.6 Shark, Robert E. “Sampling Your Drugs: A User’s Guide”, Virginia Bureau of Forensic Science Technical Brief.</p> <p>9.3.7 Fishel, C. “Validity of Hypergeometric Sampling”, Virginia Bureau of Forensic Science Technical Brief, August 29, 1988.</p> <p>9.3.8 Williams, Sidney, Editor. <i>Official Methods of Analysis of the Association of Official Analytical Chemists</i>, 14<sup>th</sup> edition. Arlington, VA: Association of Official Analytical Chemists, Inc., 1984, p. 668.</p> <p><b>9.4 Assignments</b></p> <p>9.4.1 Completion of required reading assignments (9.3.1, 9.3.2, 9.3.5, 9.3.6, 9.3.7)</p> <p>9.4.2 Study questions</p> <p><b>9.5 Study Questions</b></p> <p>9.5.1 Define the following:</p> <ul style="list-style-type: none"> <li>• Sampling</li> <li>• Statistic</li> <li>• Population</li> </ul>	

<p align="center"><b>9 SAMPLING</b></p>	<p align="center">Page 2 of 2</p>
<p align="center"><b>Division of Forensic Science</b></p> <p align="center"><b>CONTROLLED SUBSTANCES TRAINING MANUAL</b></p>	<p>Amendment Designator:</p>
	<p>Effective Date: 8-December-2003</p>
<div> <ul style="list-style-type: none"> <li>• Sample</li> <li>• Homogeneous</li> <li>• Heterogeneous</li> <li>• Aliquot</li> <li>• Random</li> <li>• Representative</li> <li>• Arbitrary</li> <li>• Selective</li> <li>• Coning and Quartering</li> <li>• Grab sample</li> <li>• Sampling without replacement</li> <li>• Sampling with replacement</li> <li>• Weight fraction</li> </ul> <p>9.5.2 Define normal distribution, binomial distribution, and hypergeometric distribution. When is each correctly used?</p> <p>9.5.3 What is the purpose of sampling?</p> <p>9.5.4 What physical properties of particles must be considered when sampling powders?</p> <p>9.5.5 What is “sampling error” and what effect does particle size have when sampling particulate matter?</p> <p>9.5.6 What are the advantages and disadvantages of sampling?</p> <p>9.5.7 What is a “composite” sample? When is it acceptable to do a composite?</p> <p>9.5.8 What criteria must be used to determine the size of the sample?</p> <p>9.5.9 What are the major deciding factors in how well a sample represents a population?</p> <p>9.5.10 How does statistically-based sampling complement personal experience?</p> <p>9.5.11 Explain the different levels of allowable failure rates using the hypergeometric sampling scheme.</p> <p>9.5.12 Outline sampling protocols used in the laboratory.</p> <p><b>9.6 Modes of Evaluation</b></p> <p>9.6.1 Written examination</p> <p align="right">♦ End</p> </div>	